

Amendments to the Claims

1. (Currently amended) A method of food product testing, such method including the steps of
selecting a sample of a food product having at least one known qualitative organoleptic
property;
preparing the sample for assay;
assaying the sample to generate a microbial profile, wherein the assay comprises the step
of hybridizing genomic material in the sample to a probe matrix having a plurality of target
species of microorganisms;
forming an output distribution representative of the microbial profile of the sample each
of the plurality of target species;
storing the output distribution in a database;
storing information related to the at least one known organoleptic property of the sample
in the database; and
mining the database to correlate the output distribution with the at least one known
qualitative organoleptic property, such that the presence of the at least one known organoleptic
property can be predicted in a food product by comparing the microbial profile of the food
product to the database.
2. (Original) The method of claim 1, wherein the step of preparing includes the step of culturing
the food sample to increase populations of a plurality of the target species prior to testing with
the array of probes.
3. (Original) The method of claim 2, wherein the step of preparing includes the steps of
extracting nucleic acid from target organisms, and
labeling and amplification of gene regions prior to detection with the probe array.
4. (Original) The method of claim 3, wherein the step of labeling is performed after the step of
amplification.
5. (Original) The method of claim 3, wherein the step of amplification is performed by
automated fluidics and incubation to produce output material for detection by said array.

6. (Previously amended) The method of claim 1, wherein the steps of preparing and assaying further comprise utilizing an automated sample preparation and array testing system.

7. (Canceled).

8. (Previously amended) The method of claim 1, wherein the step of preparing the sample includes the steps of recovering a plurality of different microorganisms from the food sample, extracting nucleic acids from the plural different microorganisms, and simultaneously amplifying plural target sequences present in the recovered nucleic acids for each of said different microorganisms.

9. (Previously amended) The method of claim 1, further comprising the step of mining the database wherein the database includes data of at least one type selected from among

(i) other output distributions,

(ii) parameters related to the source, condition or processing of food in the sample from which the output distribution was taken, and

(iii) parameters related to the source, condition or processing of food in the sample from which other output distributions were taken.

Claims 10-13. (Canceled).

14. (Currently amended) A testing method for food quality and processing comprising the steps of

selecting a sample of a food product having at least one known qualitative organoleptic property;

preparing an array having a plurality of probes, each probe being directed to gene sequences from a plurality of different target species of organisms;

preparing a sample of the food product, wherein the step of preparing a sample includes extracting nucleic acids from the sample;

amplifying the extracted nucleic acids ~~with a PCR protocol~~ such that ~~the~~ target sequences are preferentially amplified;

hybridizing the amplified nucleic acids to the probes on the array;

forming an output distribution representative of the plurality of target species of organisms present in the sample;

storing the output distribution and information related to the at least one known organoleptic property of the sample in a database; and

mining the database to correlate the output distribution with the at least one known qualitative organoleptic property such that the presence of the at least one known organoleptic property can be predicted in a food product by comparing the output distribution of the food product to the database.

15. (Canceled).
16. (Canceled).
17. (Currently amended) The testing method of claim 14, wherein the species are foodborne species affecting food ~~safety~~ or quality.
18. (Original) The testing method of claim 14, wherein the target sequences include species sequences coding for factors involved in pathogenesis or virulence factors.
19. (Currently amended) The testing method of claim 14, wherein the target sequences are species sequences selected for efficient PCR amplification as a group.
20. (Original) The testing method of claim 14, wherein the array tests for a palette of species selected from among product colonizing species, environment colonizing species, and mammalian colonizing species.
21. (Previously amended) The testing method of claim 16, further comprising the step of displaying the distribution with a note describing adverse consequences or process warning indications associated with the detected distribution.
22. (Canceled).
23. (Previously added) The testing method of claim 14, wherein the target sequences are species sequences selected for efficient probe hybridization and detection as a group.
24. (Previously added) The testing method of claim 14, further including the steps of determining sensitivity and cross reactivity of the array.

25. (Currently amended) The testing method of claim 14, wherein the output distribution indicates ~~amount~~ the quantity of each target species present in the sample.
26. (Currently amended) The method of claim 1, wherein the at least one known organoleptic property is qualitative ~~properties are~~ selected from the group ~~comprising~~ consisting of smell, texture, ~~organoleptic properties~~, and taste.
27. (Previously added) The method of claim 1, wherein the method further comprises correlating the output distribution with processing conditions.
28. (Currently amended) The method of claim 27, wherein processing conditions are selected from the group ~~comprising quality and~~ consisting of the source of a component, flavor potential, and shelf-life.
29. (Currently amended) The testing method of claim 14, wherein the at least one known organoleptic property is qualitative ~~properties are~~ selected from the group ~~comprising~~ consisting of smell, texture, ~~organoleptic properties~~, and taste.
30. (Previously added) The testing method of claim 14, wherein the method further comprises correlating the output distribution with processing conditions.
31. (Currently amended) The testing method of claim 30, wherein processing conditions are selected from the group ~~comprising quality and~~ consisting of the source of a component, flavor potential, and shelf-life.